PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 20300894KC	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/SG2003/000089	International Filing Date *(day/month/year)* 17 April 2003	Priority Date *(day/month/year)* 19 April 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl.[7] G09G 5/373, 9/445		
Applicant RADIXS PTE LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 6 sheet(s).

3. This report contains indications relating to the following items:

   - I [X] Basis of the report
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [X] Lack of unity of invention
   - V [X] Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [ ] Certain defects in the international application
   - VIII [ ] Certain observations on the international application

Date of submission of the demand	Date of completion of the report
19 November 2003	3 August 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **Stephen Lee** Telephone No. (02) 6283 2205

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/SG2003/000089

I. Basis of the report

1. With regard to the elements of the international application:*

- [ ] the international application as originally filed.
- [X] the description, pages **1-26,** as originally filed,
  - pages , filed with the demand,
  - pages , received on with the letter of
- [X] the claims, pages , as originally filed,
  - pages , as amended (together with any statement) under Article 19,
  - pages , filed with the demand,
  - pages **27-32,** received on **28 June 2004** with the letter of **28 June 2004**
- [X] the drawings, pages **1-20,** as originally filed,
  - pages , filed with the demand,
  - pages , received on with the letter of
- [ ] the sequence listing part of the description:
  - pages , as originally filed
  - pages , filed with the demand
  - pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

- [ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- [ ] the language of publication of the international application (under Rule 48.3(b)).
- [ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- [ ] contained in the international application in written form.
- [ ] filed together with the international application in computer readable form.
- [ ] furnished subsequently to this Authority in written form.
- [ ] furnished subsequently to this Authority in computer readable form.
- [ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- [ ] The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. [ ] The amendments have resulted in the cancellation of:
   - [ ] the description, pages
   - [ ] the claims, Nos.
   - [ ] the drawings, sheets/fig.

5. [ ] This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

   ☐ restricted the claims.

   ☐ paid additional fees.

   ☐ paid additional fees under protest.

   ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

   ☐ complied with.

   ☒ not complied with for the following reasons:

   The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to from a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

   Claim 1 and dependent claims relate to a system which software being in a single operating layer architecture which constitute a first special technical feature.

   Claim 5 and dependent claims relate to a system which media file is changed to a universal format which constitute a second special technical feature.

   Claim 7 and dependent claims relate to a system which the application is operated in a protected environment which constitute a third special technical feature.

   Claim 9 and dependent claims relate to a system which has automatic installation which constitute a fourth special technical feature.

   Since the above mentioned groups of claims do not share either of the technical features identified, a "technical Relationship" between the inventions, as defined in PCT rule 13.2 does not exist. Accordingly the international Application does not relate to one invention or to a single inventive concept.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

   ☒ all parts.

   ☐ the parts relating to claims Nos.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No:
PCT/SG2003/000089

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **1-45**	**YES**
	Claims	**NO**
Inventive step (IS)	Claims **1-45**	**YES**
	Claims	**NO**
Industrial applicability (IA)	Claims **1-45**	**YES**
	Claims	**NO**

2. Citations and explanations (Rule 70.7)

Novelty and Inventive Step Claims 1-45

Patent Abstracts of Japan, JP 10-171730
WO 01/96985
WO 01/90892
WO 01/79998
US 6049671
US 6456305

When read by a person skilled in the art none of the citations either individually or in obvious combination discloses all the features of the claims above. Consequently the claims are novel and involve an inventive step in the light of the citations.

The Claims

1. A software system for enabling a server to execute an application for display on a display device of a user's machine, the software system being in a single operating layer architecture in the user's machine.

2. A software system as claimed in claim 1, wherein the software system includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

3. A software system as claimed in claim 2, wherein the operating system is for security, driver support, power management, boot loader, and file system.

4. A software system as claimed in claim 1, wherein the single operating layer architecture is used in the server.

5. A system for a server to download data with constant compression rates to a user's machine to enable an HTML media file to be displayed with real-time streaming on a display device of the user's machine, the HTML media file being converted by the server from a media format to a universal media format agreed between the server and the user's machine.

6. A system as claimed in claim 1, wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the display is streamed to the display device without the plurality of applications starting their native operating systems.

7. A system for a server to enable a user's machine operate an application executed on the server, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

8. A system as claimed in claim 7, wherein the application is copied into the protected environment before execution.

9. A system for a server providing an installation of a device driver to a user's machine, the installation being sent by the server to the user's machine with instructions for automatic installation on the user's machine, the instructions being packaged with the installation prior to being sent to the user's machine so that, upon receipt by the user's machine, the user's machine can unpack the installation and the instructions where the device driver files are copied to the system file locations and the system settings updated, execute the instructions, and launch the installation on the user's machine.

10. A system as claimed in claim 9, wherein a record is kept of device driver installations used on the user's machine so that device drivers that are more frequently used are maintained in a memory of the server.

11. A system as claimed in claim 10, wherein the memory is a read-only-memory.

12. A system as claimed in any one of claims 9 to 11, wherein a new file in the installation is copied to the server.

13. A system as claimed in claim 1, wherein the user's machine includes a display device that acts as the display device for the server.

14. A system as claimed in claim 13, wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the display is streamed to the display device without the plurality of applications starting their native operating systems.

15. A system as claimed in either claims 1, or 14, wherein system operates software in a single operating layer architecture in the user's machine.

16. A system as claimed in claim 15, wherein the software includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

17. A system as claimed in claim 16, wherein the operating system is for security, driver support, power management, boot loader, and file system.

18. A system as claimed in claim 15, wherein the single operating layer architecture is used in the server.

19. A system as claimed in claim 1, wherein the server includes an HTML resizing server for resizing an HTML file before sending the HTML file to the user's machine.

20. A system as claimed in claim 19, wherein any images in the HTML file are resized to be able to be fully displayed on the display device.

21. A system as claimed in claim 19 or claim 20, wherein passing of the HTML file and amendment on the server of code for the HTML file to enable the HTML media file to be displayed on the display device.

22. A system as claimed in claim 1 or any one of claims 13 to 18, wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the display is streamed to the display device without the plurality of applications starting their native operating systems.

23. A system as claimed in claim 1 or any one of claims 13 to 18 or claim 22, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

24. A system as claimed in claim 22, wherein the application is copied into the protected environment before execution.

25. A system as claimed in claim 1 or claim 6, wherein the system includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

26. A system as claimed in claim 25, wherein the operating system is in a single operating layer architecture in the user's machine.

27. A system as claimed in claim 26, wherein the operating system is for security, driver support, power management, boot loader, and file system.

28. A system as claimed in claim 26, wherein the single operating layer architecture is used in the server.

29. A system as claimed in any one of claims 1, 6, or 25 to 28, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

30. A system as claimed in claim 29, wherein the application is copied into the protected environment before execution.

31. A system as claimed in any one of claims 1, 5, 19 to 21 wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the data is streamed to the display device without the plurality of applications starting their native operating systems.

32. A system as claimed in any one of claims 1 to 4, 15 to 18, or 26 to 28, wherein the single operating layer architecture includes an engine executor for providing a software interface.

33. A system as claimed in any one of claims 1 to 4, 15 to 18, 26 to 28 or 32, wherein the single operating layer architecture includes an engine listener for providing native hardware support.

34. A system as claimed in any one of claims 1 to 4, 15 to 18, 26 to 28, 32 or 33, wherein the single operating layer architecture does not have a software layer.

35. A system as claimed in any one of claims 1 to 4, 15 to 18, 26 to 28, or 32 to 34, wherein application programming interfaces are translated into commands.

36. A system as claimed in any one of claims 1 to 4, 15 to 18, 26 to 28, or 32 to 35, wherein the user's machine is able to launch, execute, manipulate, monitor and quit applications on the server.

37. A system as claimed in any one of claims 1 to 4, 15 to 18, 26 to 28, or 32 to 36, wherein the platform recognizes pre-programmed hardware and will not work with unauthorized hardware.

38. A system as claimed in any one of claims 19 to 21, or 31 to 32, wherein the resizing is by adding width and height tags to any object in the file that does not have those tags, and amending the values in the width and height tags so they can be displayed on the display device in accordance with a resolution requirement of the display device.

39. A system as claimed in claim 38, wherein the width tag value is divided by 800 and multiplied by a width of the requested resolution.

40. A system as claimed in claim 38 or claim 39, wherein the height tag value is divided by 600 and multiplied by a height of the requested resolution.

41. A system as claimed in any one of claims 5, 19 to 21, or 31 to 32, wherein the universal media format is pre-determined.

42. A system as claimed in claim 41, wherein the universal media format is a streaming format and has constant compression rates.

43. A system as claimed in claim 41 or claim 42, wherein the conversion to the universal media format is by first decoding and decompression of the HTML media file to raw data.

44. A software arrangement that is operable on a processor, the software arrangement comprising a computer program that configures the processor to perform one or more of the systems as claimed in any one of claims 1 to 43.

45. A computer system that comprises one or means for performing corresponding one or more of the systems as claimed in any one of claims 1 to 43.

The Claims

1. A system for a server to stream data to a user's machine, wherein the data is sent to the user's machine as a stream of data for display and manipulation on the user's machine with a resolution determined by the ability of the user's machine to display the data.

2. A system for a server to enable a user's machine to operate and manipulate an application, wherein the application is executed on the server and such data as is required for the user's machine to operate and display the application is sent to the user's machine as a stream of data for display on the user's machine with a resolution determined by the ability of the user's machine to operate and display the application.

3. An application service provider operating system wherein an application is executed on a server, the server being for streaming data for display and manipulation on a display device of a machine of a user, the data being streamed to accord with a resolution requirement of the display device, the display device acting as the display device of the server.

4. A software system for enabling a server to execute an application for display and manipulation on a display device of a user's machine, the software system being in a single operating layer architecture in the user's machine.

5. A software system as claimed in claim 4, wherein the software system includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

6. A software system as claimed in claim 6, wherein the operating system is for security, driver support, power management, boot loader, and file system.

7. A software system as claimed in claim 4, wherein the single operating layer architecture is used in the server.

8. A system for a server to download data to a user's machine to enable a media file to be displayed on a display device of the user's machine, the media file being converted by the server from a media format to a universal media format agreed between the server and the user's machine.

9. A system as claimed in claim 8, wherein constant compression rates are used to allow real-time streaming of the data.

10. A system for a server to download data to a user's machine to enable an HTML file to be displayed on a display device of the user's machine, the server including an HTML resizing server for resizing the file before sending the file to the user's machine.

11. A system as claimed in claim 10, wherein any images in the HTML file are resized to be able to be fully displayed on the display device.

12. A system as claimed in claim 10 or claim 11, wherein passing of the HTML file and amendment on the server of code for the HTML file to enable the HTML media file to be displayed on the display device.

13. A system as claimed in claim 3, wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the display and data is streamed to the display device without the plurality of applications starting or having a need for their native operating systems.

14. A system for a server to enable a user's machine operate an application executed on the server, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

15. A system as claimed in claim 14, wherein the application is copied into the protected environment before execution.

16. A system for a server providing an installation to a user's machine, the installation being sent by the server to the user's machine with instructions for automatic installation on the user's machine, the instructions being packaged with the installation prior to being sent to the user's machine so that, upon receipt by the user's machine, the user's machine can unpack the installation and the instructions, execute the instructions, and launch the installation on the user's machine.

17. A system as claimed in claim 16, wherein the installation is a device driver.

18. A system as claimed in claim 17, wherein the device driver files are copied to the system file locations and the system settings updated.

19. A system as claimed in any one of claims 16 to 18, wherein a record is kept of device driver installations used on the user's machine so that device drivers that are more frequently used are maintained in a memory of the server.

20. A system as claimed in claim 19, wherein the memory is a read-only-memory.

21. A system as claimed in claim 16, wherein the installation is an update for an operating system operating on the user's machine.

22. A system as claimed in any one of claims 16 to 21, wherein a new file in the installation is copied to the server.

23. A system as claimed in claim 2, wherein the user's machine includes a display device that acts as the display device for the server.

24. A system as claimed in claim 23, wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the display is streamed to the display device without the plurality of applications starting or having a need for their native operating systems.

25. A system as claimed in any one of claims 2, 23 or 24, wherein system operates software in a single operating layer architecture in the user's machine.

26. A system as claimed in claim 25, wherein the software includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

27. A system as claimed in claim 26, wherein the operating system is for security, driver support, power management, boot loader, and file system.

28. A system as claimed in claim 25, wherein the single operating layer architecture is used in the server.

29. A system as claimed in claim 1, wherein the data is a media file to be displayed on a display device of the user's machine, the HTML media file being converted by the server from a media format to a universal media format agreed between the server and the user's machine.

30. A system as claimed in claim 29, wherein constant compression rates are used to allow real-time streaming of the data.

31. A system as claimed in any one of claims 1, 29 or 30, wherein the server includes an HTML resizing server for resizing an HTML file before sending the HTML file to the user's machine.

32. A system as claimed in claim 31, wherein any images in the HTML file are resized to be able to be fully displayed on the display device.

33. A system as claimed in claim 31 or claim 32, wherein passing of the HTML file and amendment on the server of code for the HTML file to enable the HTML media file to be displayed on the display device.

34. A system as claimed in claim 2 or any one of claims 23 to 28, wherein a plurality of applications are executed on the server, all applications being executed on the

server under a single operating system such that the display is streamed to the display device without the plurality of applications starting their native operating systems.

35. A system as claimed in claim 2 or any one of claims 23 to 28 or claim 34, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

36. A system as claimed in claim 34, wherein the application is copied into the protected environment before execution.

37. A system as claimed in claim 3 or claim 13, wherein the system includes a platform for operating on the user's machine; the platform including a platform engine operating as an operating system.

38. A system as claimed in claim 37, wherein the operating system is in a single operating layer architecture in the user's machine.

39. A system as claimed in claim 38, wherein the operating system is for security, driver support, power management, boot loader, and file system.

40. A system as claimed in claim 38, wherein the single operating layer architecture is used in the server.

41. A system as claimed in any one of claims 3, 13, or 37 to 40, wherein the application is executed in a protected environment in which access controls are implemented to restrict access by the application to at least one restricted area of the system.

42. A system as claimed in claim 41, wherein the application is copied into the protected environment before execution.

43. A system as claimed in claim 8 or claim 9, wherein the data is an HTML file to be displayed on a display device of the user's machine, the server including an HTML resizing server for resizing the file before sending the file to the user's machine.

44. A system as claimed in claim 43, wherein any images in the HTML file are resized to be able to be fully displayed on the display device.

45. A system as claimed in claim 43 or claim 44, wherein passing of the HTML file and amendment on the server of code for the HTML file to enable the HTML media file to be displayed on the display device.

46. A system as claimed in any one of claims 1, 8, 9, 29 to 33 or 43 to 45 wherein a plurality of applications are executed on the server, all applications being executed on the server under a single operating system such that the data is streamed to the display device without the plurality of applications starting their native operating systems.

47. A system as claimed in any one of claims 4 to 7, 25 to 28, or 38 to 40, wherein the single operating layer architecture includes an engine executor for providing a software interface.

48. A system as claimed in any one of claims 4 to 7, 25 to 28, 38 to 40 or 47, wherein the single operating layer architecture includes an engine listener for providing native hardware support.

49. A system as claimed in any one of claims 4 to 7, 25 to 28, 38 to 40, 47 or 48, wherein the single operating layer architecture does not have a software layer.

50. A system as claimed in any one of claims 4 to 7, 25 to 28, 38 to 40, or 47 to 49, wherein application programming interfaces are translated into commands.

51. A system as claimed in any one of claims 4 to 7, 25 to 28, 38 to 40, or 47 to 50, wherein the user's machine is able to launch, execute, manipulate, monitor and quit applications on the server.

52. A system as claimed in any one of claims 4 to 7, 25 to 28, 38 to 40, or 47 to 51, wherein the platform recognizes pre-programmed hardware and will not work with unauthorized hardware.

53. A system as claimed in any one of claims 10 to 12, 31 to 33, or 43 to 47, wherein the resizing is by adding width and height tags to any object in the file that does not have those tags, and amending the values in the width and height tags so they can be displayed on the display device in accordance with a resolution requirement of the display device.

54. A system as claimed in claim 53, wherein the width tag value is divided by 800 and multiplied by a width of the requested resolution.

55. A system as claimed in claim 53 or claim 54, wherein the height tag value is divided by 600 and multiplied by a height of the requested resolution.

56. A system as claimed in any one of claims 3, 13, 37 to 42 or 53 to 55, wherein the resolution requirements are provided to the server by the user's machine.

57. A system as claimed in any one of claims 8, 9, 29 to 33, or 43 to 47, wherein the universal media format is pre-determined.

58. A system as claimed in claim 57, wherein the universal media format is a streaming format and has constant compression rates.

59. A system as claimed in claim 57 or claim 58, wherein the conversion to the universal media format is by transcoding.

60. A system as claimed in claim 57 or claim 58, wherein the conversion to the universal media format is by first decoding and decompression of the HTML media file to raw data.

61. A software arrangement that is operable on a processor, the software arrangement comprising a computer program that configures the processor to perform one or more of the systems as claimed in any one of claims 1 to 60.

62. A computer system that comprises one or means for performing corresponding one or more of the systems as claimed in any one of claims 1 to 60.